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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,885	11/20/2003	Wilhelm P. Kutsch	13959	9409

7590 08/03/2005

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EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 08/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/717,885	Applicant(s) KUTSCH ET AL.	
	Examiner Martin J. Angebrannt	Art Unit 1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/20/03</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-19 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 11 at line 5, after "outer" please insert - - surface- - .

In claims 6,18, and 32, "acrylate acrylics" makes no sense chemically the applicant could choose to recite --acrylates-- or --acrylics--. (PMMA is an acrylate)

The methods of claim 1 are methods of laser ablating a substrate, not embossing it.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4, 6-14,16-29 and 31-33 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Monaghan et al. GB 2335288.

Monaghan et al. GB 2335288 teaches with respect to figure 1 a translating table (22) with a layer upon it which may be translated by the motors, which are computer controlled and a Nd:YAG laser which is split by three mirrors to allow the different azimuthal orientation shown in figures 3 and 4 to be achieved, which is also computer controlled. The workpiece is translated stepwise and abated areas are formed corresponding to the interference pattern formed on the spot. The workpiece is any material capable of being worked by the laser, including plastics such as polyimide (KAPTON) and iminimides, which are available as (seamless) sheets 32-42 inches. Larger sheets can be worked and this avoids the problem of the prior art with seam lines (pages 5-7. Figure 2 illustrates a similar embodiment where the cylindrical workpiece is used, rather than a sheet and it may be translated or rotated as desired. (pages 7-9) The changing of the azimuthal orientation of the fringes is specifically disclosed on page 9. The angle between the beams can also be changed to control the pitch of the fringes (page 10) Claim 6 recites the exposing patterns in different patterns and claim 7 described these as being different orientations.

6. Claims 11-17,19-23,25,27-31 and 33-34 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Monaghan et al. '780.

Monaghan et al. '780 teaches with respect to figures 1 and 3, a translating table (21) with a layer (20) upon it which may be translated by the motors, which are computer controlled and a pulsed laser which is split by and the angle of two beams are each controlled by a galvanometer, to allow the different azimuthal orientation and pitches to be achieved. (4/1-306/3-8/12). These galvanometers and the laser firing are also computer controlled. The workpiece is translated stepwise and abated areas are formed corresponding to the interference pattern formed on the spot or the beams may be moved by the galvanometers. (7/65-12). The changing of the

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azimuthal orientation of the fringes is specifically disclosed. The angle between the beams can also be changed to control the pitch of the fringes (9/1-44).

7. Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monaghan et al. GB 2335288 and Monaghan et al. '780.

It would have been obvious to one skilled in the art to modify Monaghan et al. GB 2335288 by beams controlling means of Monaghan et al. '780 to allow the beams to be moved, rather than the workpiece and/or to allow a wider variety of azimuthal angles to be achieved. It also would have been obvious to modify the processes of Monaghan et al. '780 by using known materials such as Kapton or other materials known to be laser ablatable to form grating patterns and/or other substrate shapes, such as cylinders to allow the formation of stamping roller, which may stamp/emboss materials continuously rather than serially.

8. Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Monaghan et al. GB 2335288 and Monaghan et al. '780, further in view of Langille et al. '157, Rumsby GB 2222696, Jelly et al. '027, Chazan '966 or Andrews '785.

Langille et al. '157 teach laser ablation to form holographic patterns directly in various materials including acrylics, polycarbonate, polyimides, and epoxies. (5/31-48).

Rumsby GB 2222696 teaches the use of laser to ablate grating structures directly into polycarbonate, polyethylene terephthalate or polyimide (page 2/paragraph 3)

Jelly et al. '027 teach the laser ablation of acrylated epoxides to pattern them (3/61-64).

Chazan '966 teaches the laser ablation of PMMA, polycarbonates, PTFE, polysulfones and polyethylenes to pattern them (8/5-25).

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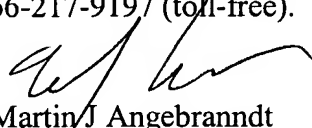
Andrews '785 teaches the laser ablation of PMMA, polycarbonates, PTFE, polyamides, polyimides and PET to pattern them (8/5-25).

9. In addition to the basis provided above, it would have been obvious to one skilled in the art to modify the inventions resulting from the combination of Monaghan et al. GB 2335288 and Monaghan et al. '780 by patterning other polymers known to be layer ablatable, such as those disclosed by Langille et al. '157, Rumsby GB 2222696, Jelly et al. '027, Chazan '966 or Andrews '785 with a reasonable expectation of success based upon the evidenced workability of these materials by laser ablation techniques

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Martin J. Angebranndt
Primary Examiner
Art Unit 1756

7/26/05